



# Phospho-ATM (S1981) Antibody

<b>Product Code</b>	CSB-RA618770A1981pHUU
<b>Abbreviation</b>	Serine-protein kinase ATM
<b>Storage</b>	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
<b>Uniprot No.</b>	Q13315
<b>Immunogen</b>	A synthesized peptide derived from Human Phospho-ATM (S1981)
<b>Species Reactivity</b>	Human
<b>Tested Applications</b>	ELISA, IF; Recommended dilution: IF:1:20-1:200
<b>Relevance</b>	<p>Serine/threonine protein kinase which activates checkpoint signaling upon double strand breaks (DSBs), apoptosis and genotoxic stresses such as ionizing ultraviolet A light (UVA), thereby acting as a DNA damage sensor. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX at double strand breaks (DSBs), thereby regulating DNA damage response mechanism. Also plays a role in pre-B cell allelic exclusion, a process leading to expression of a single immunoglobulin heavy chain allele to enforce clonality and monospecific recognition by the B-cell antigen receptor (BCR) expressed on individual B-lymphocytes. After the introduction of DNA breaks by the RAG complex on one immunoglobulin allele, acts by mediating a repositioning of the second allele to pericentromeric heterochromatin, preventing accessibility to the RAG complex and recombination of the second allele. Also involved in signal transduction and cell cycle control. May function as a tumor suppressor. Necessary for activation of ABL1 and SAPK. Phosphorylates DYRK2, CHEK2, p53/TP53, FANCD2, NFKBIA, BRCA1, CTIP, nibrin (NBN), TERF1, RAD9 and DCLRE1C. May play a role in vesicle and/or protein transport. Could play a role in T-cell development, gonad and neurological function. Plays a role in replication-dependent histone mRNA degradation. Binds DNA ends. Phosphorylation of DYRK2 in nucleus in response to genotoxic stress prevents its MDM2-mediated ubiquitination and subsequent proteasome degradation. Phosphorylates ATF2 which stimulates its function in DNA damage response.</p>
<b>Form</b>	Liquid
<b>Conjugate</b>	Non-conjugated
<b>Storage Buffer</b>	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
<b>Purification Method</b>	Affinity-chromatography
<b>Isotype</b>	Rabbit IgG
<b>Clonality</b>	Monoclonal
<b>Alias</b>	Serine-protein kinase ATM, Ataxia telangiectasia mutated, A-T mutated, ATM
<b>Immunogen Species</b>	Homo sapiens (Human)

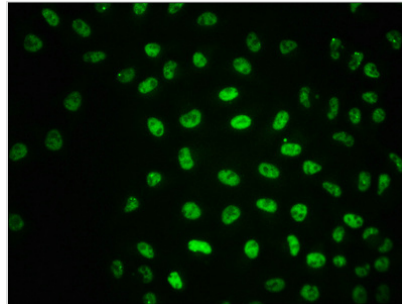


**Research Area** Epigenetics and Nuclear Signaling

**Gene Names** ATM

**Accession NO.** 1C5

**Image**



Immunofluorescence staining of HeLa cells with CSB-RA618770A1981pH1U at 1:100, counterstained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. The secondary antibody was Alexa Fluor 488-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L).

**Description**

The vectors expressing anti-ATM antibody were constructed as follows: immunizing an animal with a synthesized peptide derived from human Phospho-ATM (S1981), isolating the positive splenocyte and extracting RNA, obtaining DNA by reverse transcription, sequencing and screening ATM antibody gene, and amplifying heavy and light chain sequence by PCR and cloning them into plasma vectors. After that, the vector clones were transfected into the mammalian cells for production. The product is the recombinant ATM antibody. Recombinant ATM antibody in the culture medium was purified using affinity-chromatography. It can react with ATM protein from Human and is used in the ELISA, IF.

ATM is a protein-coding gene that encodes the serine-protein kinase ATM. Diseases associated with ATM include ataxia and mantle cell lymphoma. Its related pathways include miRNA regulation of DNA damage response and DNA damage response. According to some research, ATM may have the following features.

ATM is an important sensor of reactive oxygen species in human cells. A portion of nuclear ATM co-localizes with  $\gamma$ -H2AX at DSBs in response to DNA damage. ATM is also active in other cellular signaling pathways involved in maintaining cellular homeostasis. Various injury-induced responses may be activated by enhancing the protein kinase activity of ATM. ATM is activated by DNA double-strand breaks through the Mre11-Rad50-Nbs1 complex. ATM and ATR often work together to signal DNA damage and regulate downstream processes.